



PERFORMANCE = INDEX =



**Ranking the Best Media Sources
in Mobile Advertising Since 2015**



March 2018



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Introduction



The industry-standard *AppsFlyer Performance Index* is back with Edition VI, launching for the third time at Mobile World Congress 2018 in Barcelona. The index offers app marketers a comprehensive report card on the performance of media sources during the second half of 2017 across eight regions around the world.

Thanks to AppsFlyer's massive growth, we have further increased our leading global footprint. Such scale allows us to provide the most accurate findings, while presenting more options and insights than ever.

What's New in Edition VI?

Industry-First Retargeting Index: The shift from user acquisition to app engagement has led marketers to significantly increase their investment in retargeting. Retargeting is now a central component in their re-engagement strategy. In fact, we've seen the number of retargeting conversions triple year-over-year. Our global retargeting index offers app marketers key insights into the most successful media sources for engaging with an existing user base.

ROI Index by category: Introduced in Edition V, the ROI Index is back with a deeper breakdown of bottom line performance based on over \$1 Billion in revenue: by platform and by category for both gaming and non-gaming categories.

Deeper regional division in Asia: In the previous index we grouped China, Taiwan, Hong-Kong, Japan, and South Korea into a single region we called "North Pacific Asia." This time around, China, Taiwan and Hong Kong are one region (Greater China) while Japan and South Korea make up their own separate region.

BONUS (appears in Insights section) — Long-term week 12 retention ranking: For the first time, the index's retention score included week 12 retention -- perhaps the strongest indication of user quality. In addition, we have prepared a special week 12 retention-only ranking which yielded some surprising results.



Methodology



Data Highlights

PERIOD

H2 (July-December 2017)

OF MEDIA NETWORKS EVALUATED

250

(with a minimum of 20,000 attributed installs)

OF APPS

6,000

(with a minimum of 2,000 non-organic installs)

OF INSTALLS

6.5
Billion

OF APP OPENS

15
Billion

Rankings



We removed media sources that did not meet our strict threshold on two fronts:

1) Volume: Based on client adoption and the number of attributed installs, both on a per region and per platform level.

2) Fraud: Based on a fraud rate per region (a detailed explanation appears in the fraud section). AppsFlyer's unrivaled scale in the market enables us to provide the most accurate impact of fraud on the performance of media sources.

THE PERFORMANCE INDEX

Volume Ranking: A ranking of media sources based on the total number of attributed installs each had generated, minus the number of fraudulent installs that came in through its network. This subtraction generated a clean (fraud-free) number, from which an additional fraud penalty was factored based on the regional fraud rate of the network in question.

Power Ranking - Volume & Retention Combined: We normalized and combined the number of clean (fraud-free) installs and the weighted retention score* of each media source. We then factored an additional fraud penalty based on the network's overall fraud rate for the region in question.

THE GLOBAL ROI INDEX

We calculated each media source's clean revenue figure (based on its regional poaching fraud rate), and then factored an additional fraud penalty based on this rate. We then divided the revenue figure by the network's eCPI based on our massive volume of cost data from over 100 sources.

It is important to stress that the ROI Index only factored apps that reported cost and revenue.

THE GLOBAL RETARGETING INDEX

Volume Ranking: A ranking of media sources based on the total number of attributed retargeting conversions each had generated. A conversion occurs when an existing user that has the app installed engages with the retargeting campaign (excluding re-attributions).

Power Ranking - Volume & Generated Revenue Combined: We normalized and combined the number of attributed retargeting conversions and the revenue generated from these conversions (based on all events reported after the retargeting attribution occurs and within its attribution window).

Retention Score



STEP 1

We calculated the non-organic retention rate of each app per media source and per region. We did this separately for each day of a 30-day period, dividing the number of users who were active on the day in question by the total number of users who first launched the app in the selected timeframe.

We added two longer term signals -- week 8 and week 12 post install -- dividing the number of users who were active on the week in question by the total number of users who first launched the app in the selected weekly timeframe.

STEP 2

We calculated the organic retention rate of each app on a regional level, separately for each day over 30 days, and for week 8 and week 12.

STEP 3

We then compared the non-organic and organic retention rates for each time frame. Using organic retention as a benchmark significantly reduces the impact of a given app's quality, and therefore offers a far stronger indication of a media source's performance.

STEP 4

We calculated a weighted average using a retention-based logic; the longer a user is retained, the higher the assigned weight. As such, the day 1 non-organic to organic ratio had the least weight, and week 12 the most weight. This weighted average serves as our retention score.

STEP 5

We calculated a network's overall weighted retention score for a platform, region and category in question by taking the retention score of each app separately and factoring the number of installs it delivered.

Fraud



Install fraud rate: We divided the number of a network's fraudulent installs coming mainly from DeviceID Reset Fraud by its total number of attributed installs.

Poaching fraud rate: We divided the number of a network's fraudulent installs coming from click flooding, install hijacking, and click hijacking by its total number of attributed installs.

Overall fraud rate: We divided a network's poaching and install fraud by its total number of attributed installs.

Clean installs calculation: We reduced the number of fraudulent installs from each network's overall install count according to its install and poaching fraud rates (the latter is based on stealing organic or non-organic users of other networks and therefore impacts the install count).

Clean retention score calculation: We reduced a network's retention score according to its poaching fraud rate (most of this fraud is based on stealing organic users, thereby elevating a network's retention and engagement level).

Clean ROI calculation: We reduced a network's average revenue per user (ARPU) figure according to its poaching fraud rate (similar to the clean retention score calculation since ARPU is a quality KPI).

Fraud per region: Because the level of fraud differs by region for different networks, each rate was calculated separately per region (matching the index's regional division).

Exclusion: Networks that did not meet our overall fraud rate threshold by region were excluded from the index in question.

General Notes



The traffic analyzed in the index includes both incentivized and non-incentivized ad formats.

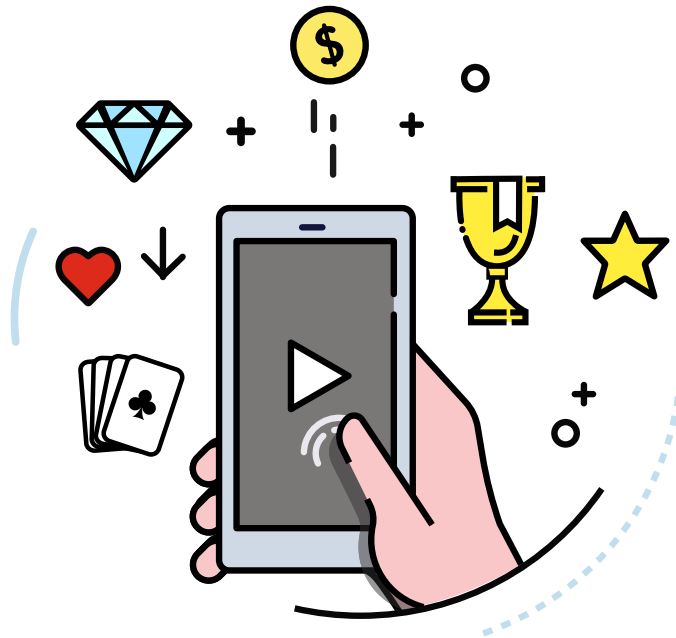
The universal rankings only include media sources with significant activity in at least two of the following regions: North America, Latin America, Asia and Europe



The Performance Index



PART I Gaming





The Performance Index



GAMING / UNIVERSAL Power Ranking

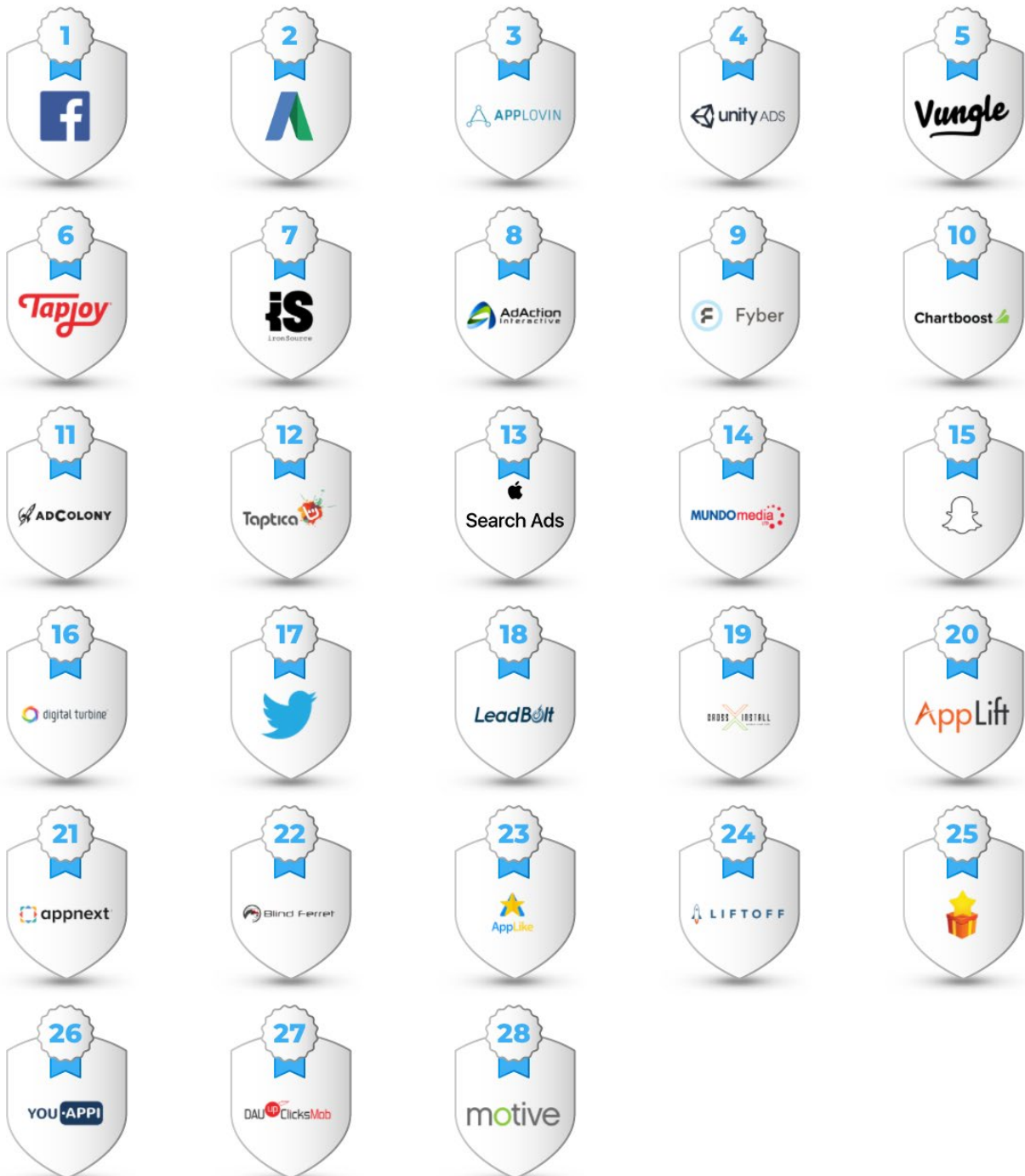




The Performance Index



GAMING / UNIVERSAL Volume Ranking

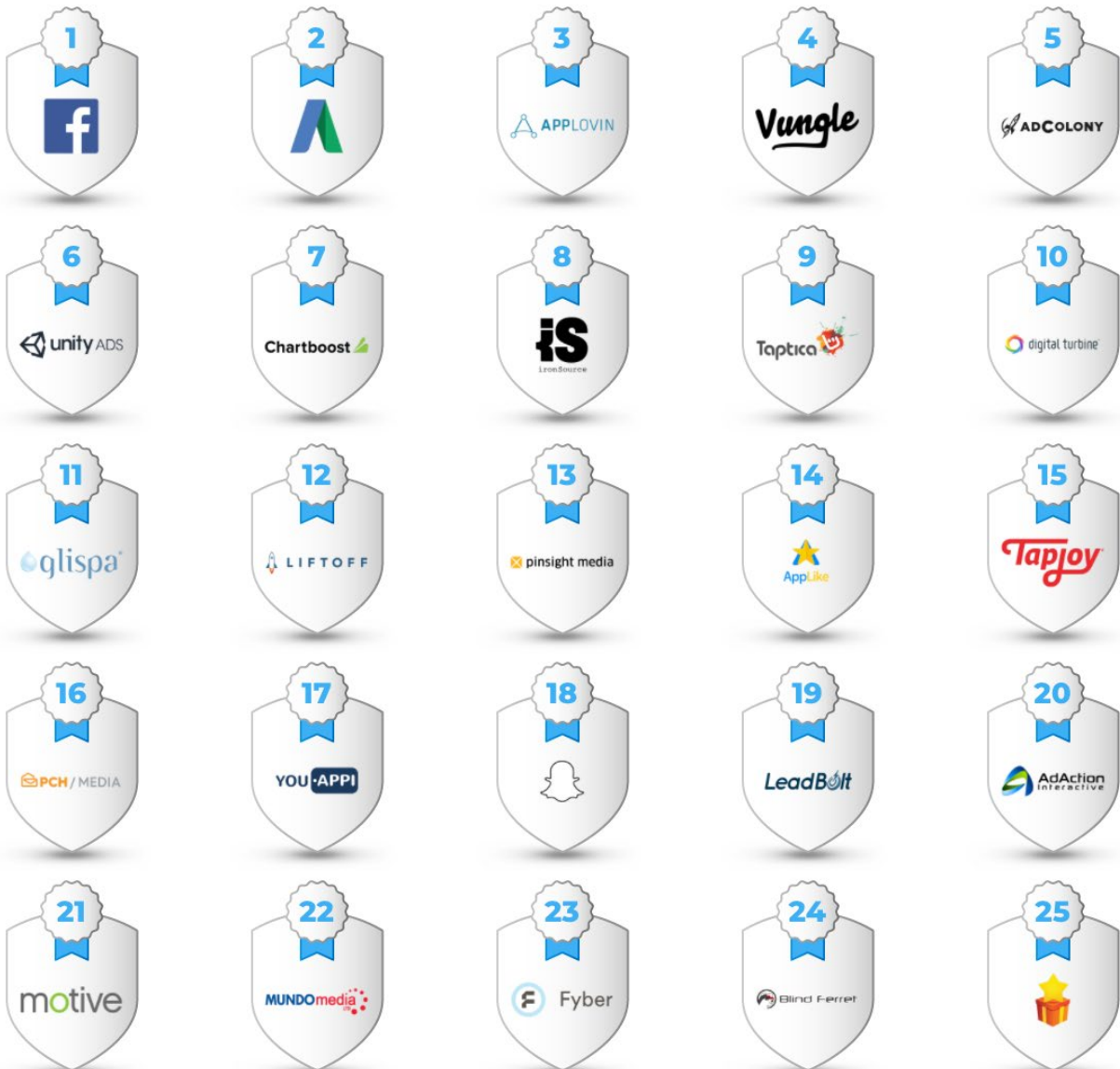




The Performance Index



NORTH AMERICA / GAMING / ANDROID Power Ranking

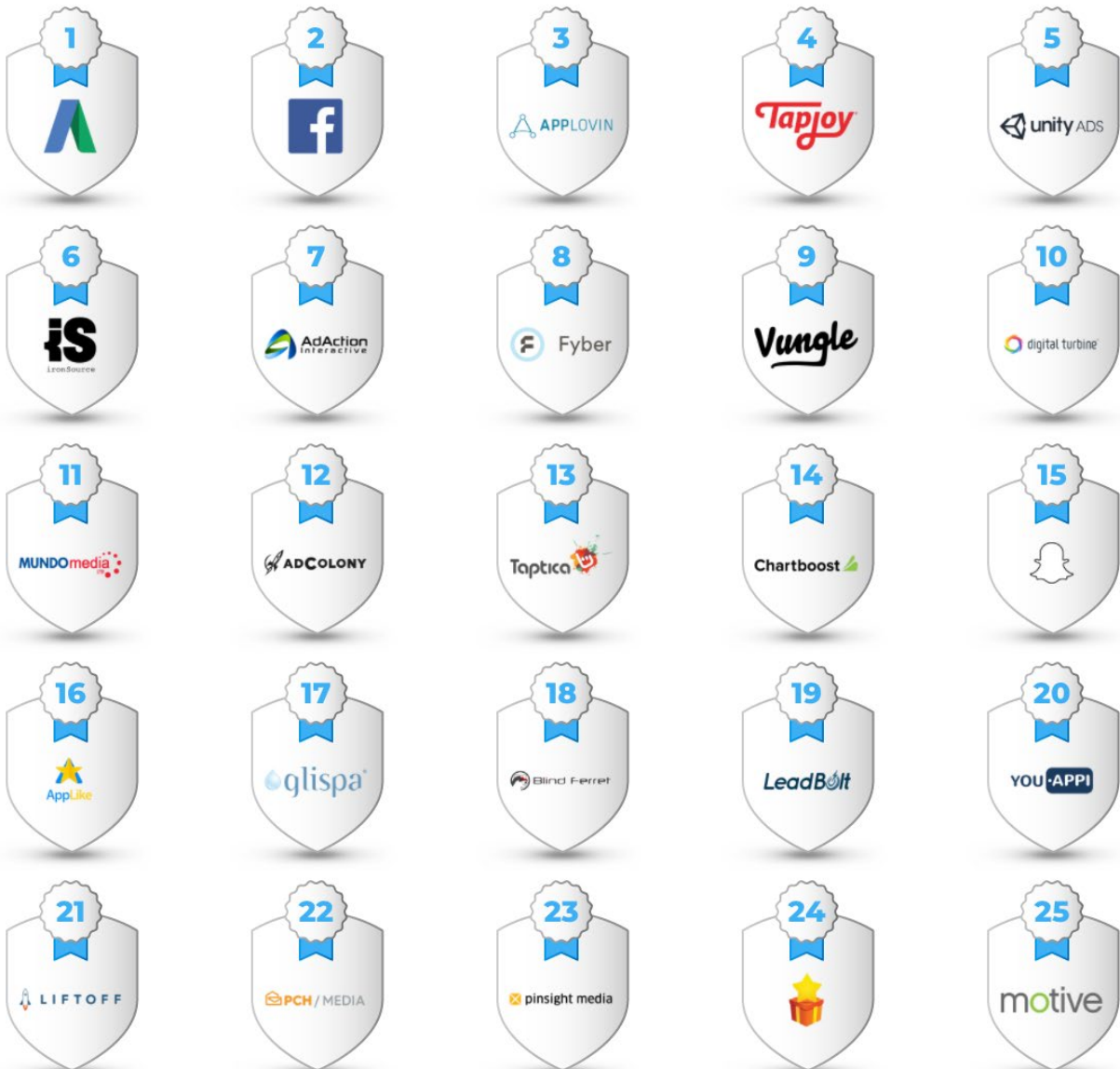




The Performance Index



NORTH AMERICA / GAMING / ANDROID Volume Ranking





The Performance Index



NORTH AMERICA / GAMING / iOS Power Ranking

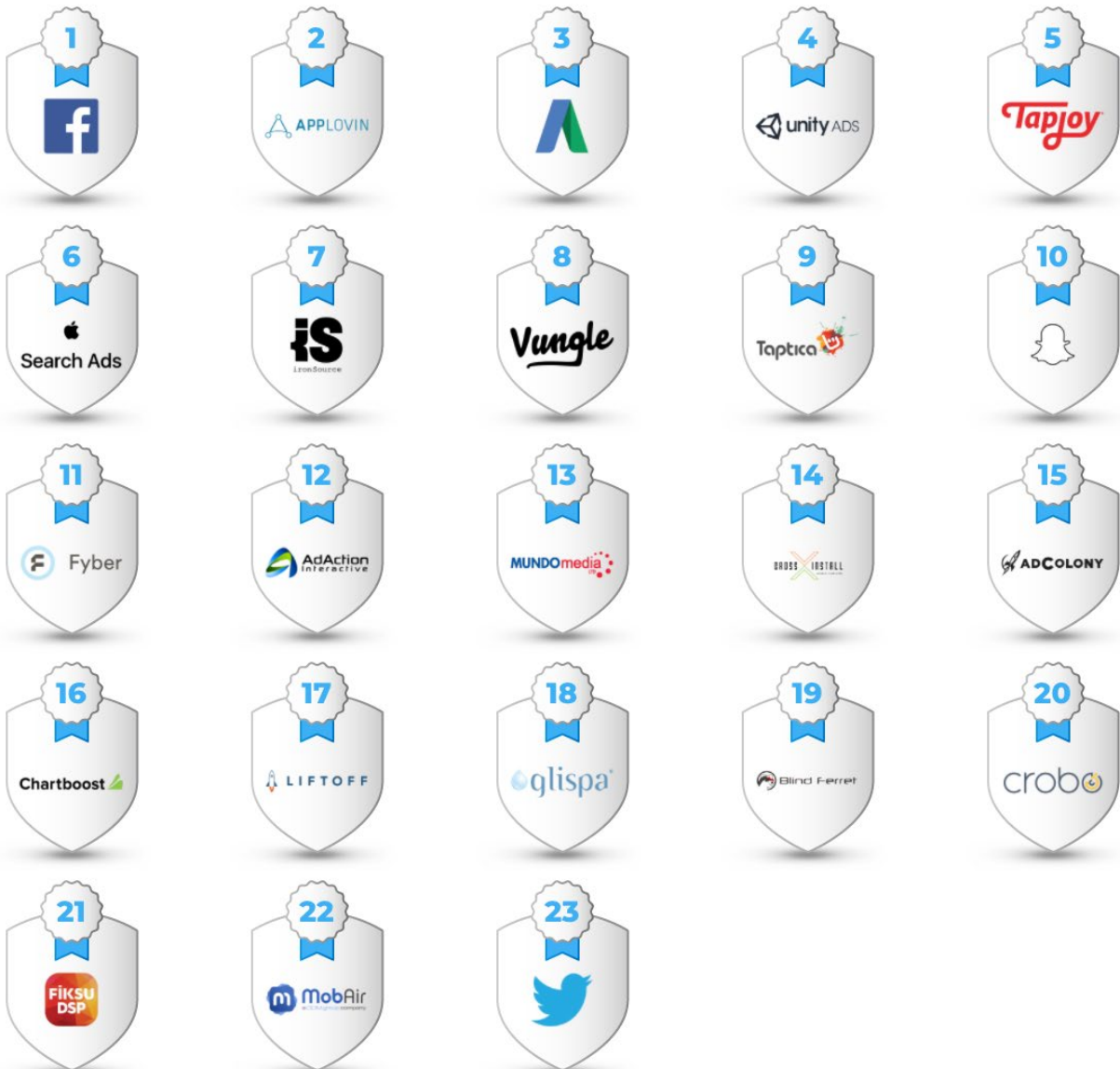




The Performance Index



NORTH AMERICA / GAMING / iOS Volume Ranking





The Performance Index



LATIN AMERICA / GAMING / ANDROID Power Ranking





The Performance Index



LATIN AMERICA / GAMING / ANDROID Volume Ranking





The Performance Index



LATIN AMERICA / GAMING / iOS Power Ranking





The Performance Index



LATIN AMERICA / GAMING / iOS Volume Ranking





The Performance Index



EASTERN EUROPE / GAMING / ANDROID Power Ranking





The Performance Index



EASTERN EUROPE / GAMING / ANDROID Volume Ranking





The Performance Index



EASTERN EUROPE / GAMING / iOS Power Ranking





The Performance Index



EASTERN EUROPE / GAMING / iOS Volume Ranking

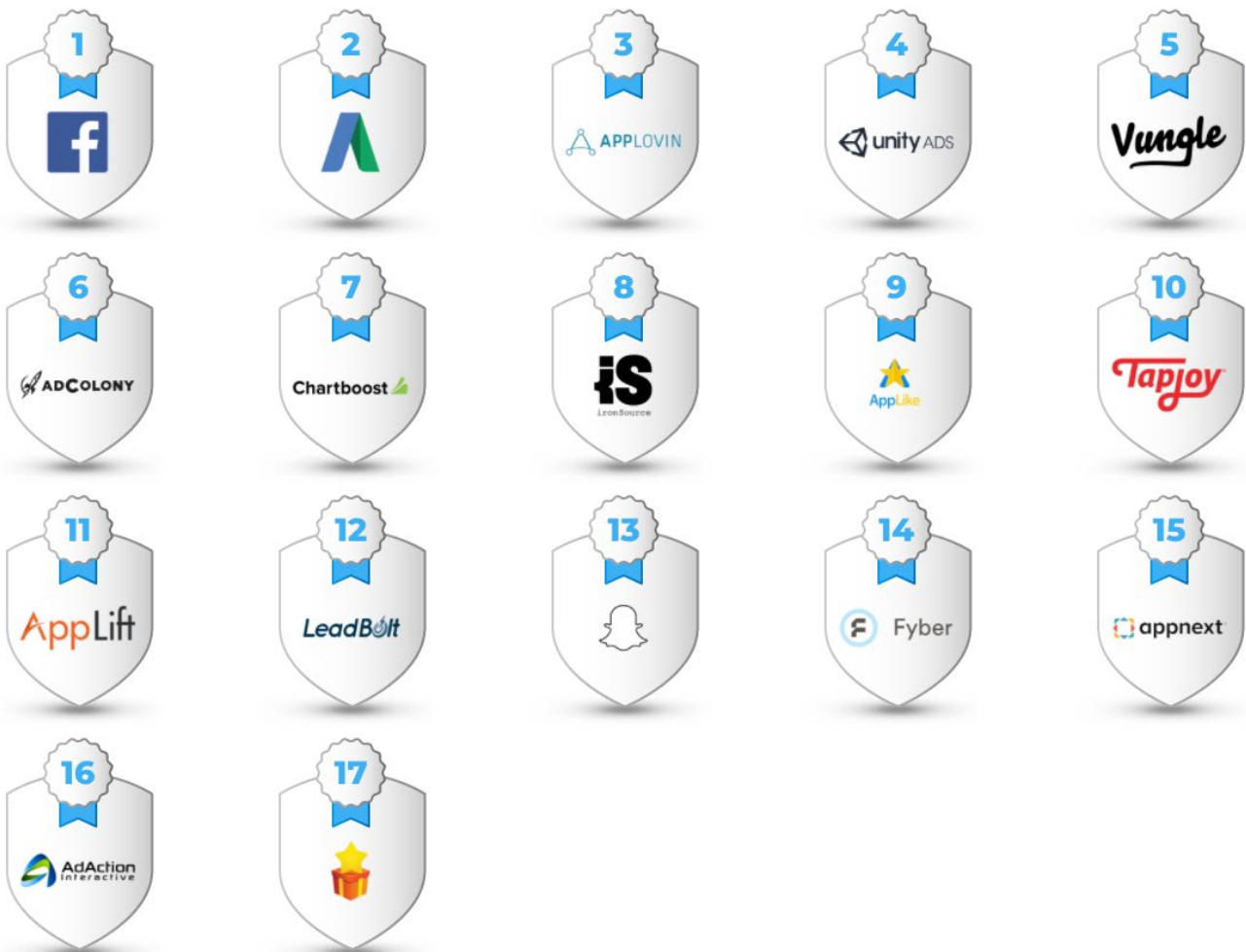




The Performance Index



WESTERN EUROPE / GAMING / ANDROID Power Ranking

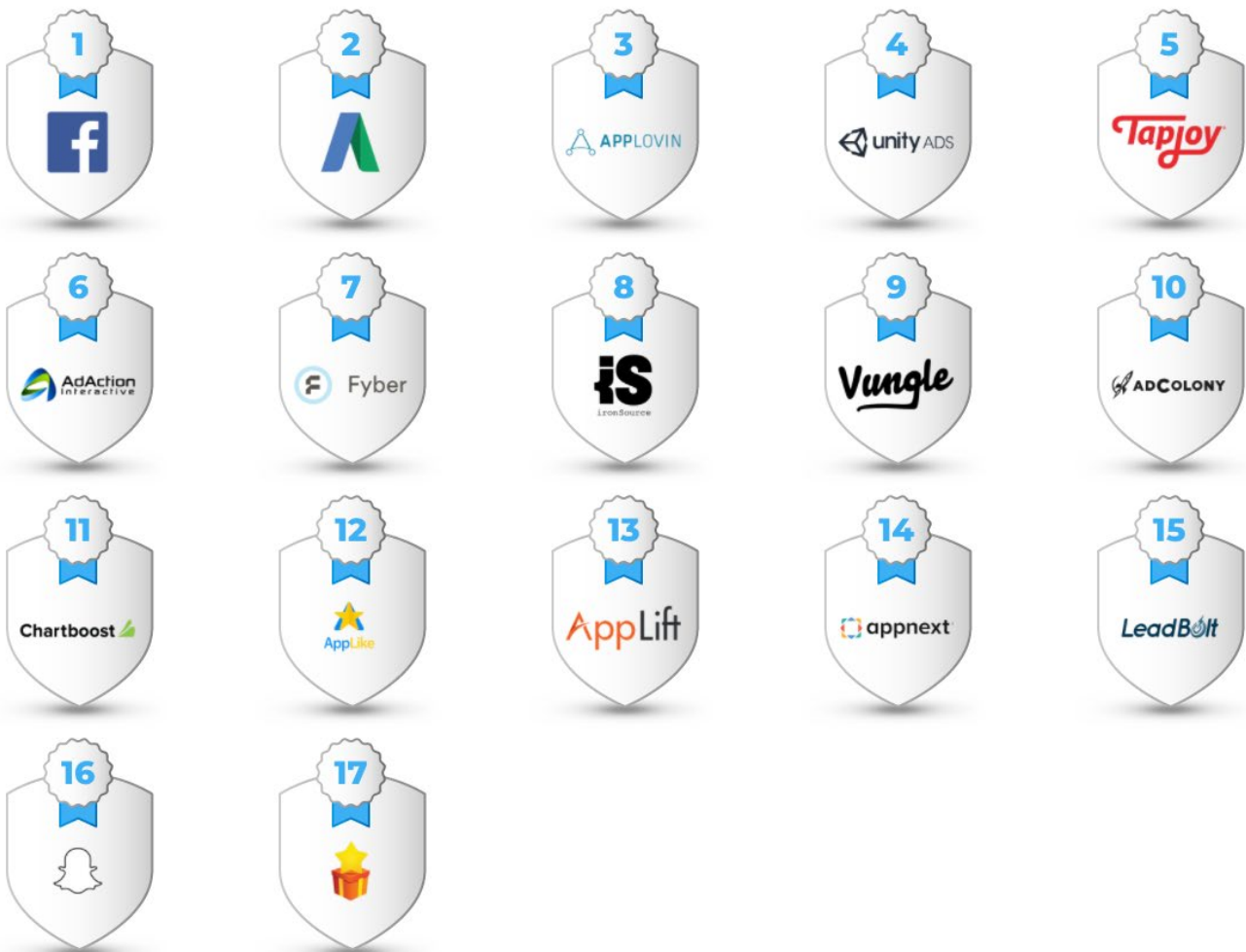




The Performance Index



WESTERN EUROPE / GAMING / ANDROID Volume Ranking





The Performance Index



WESTERN EUROPE / GAMING / iOS Power Ranking

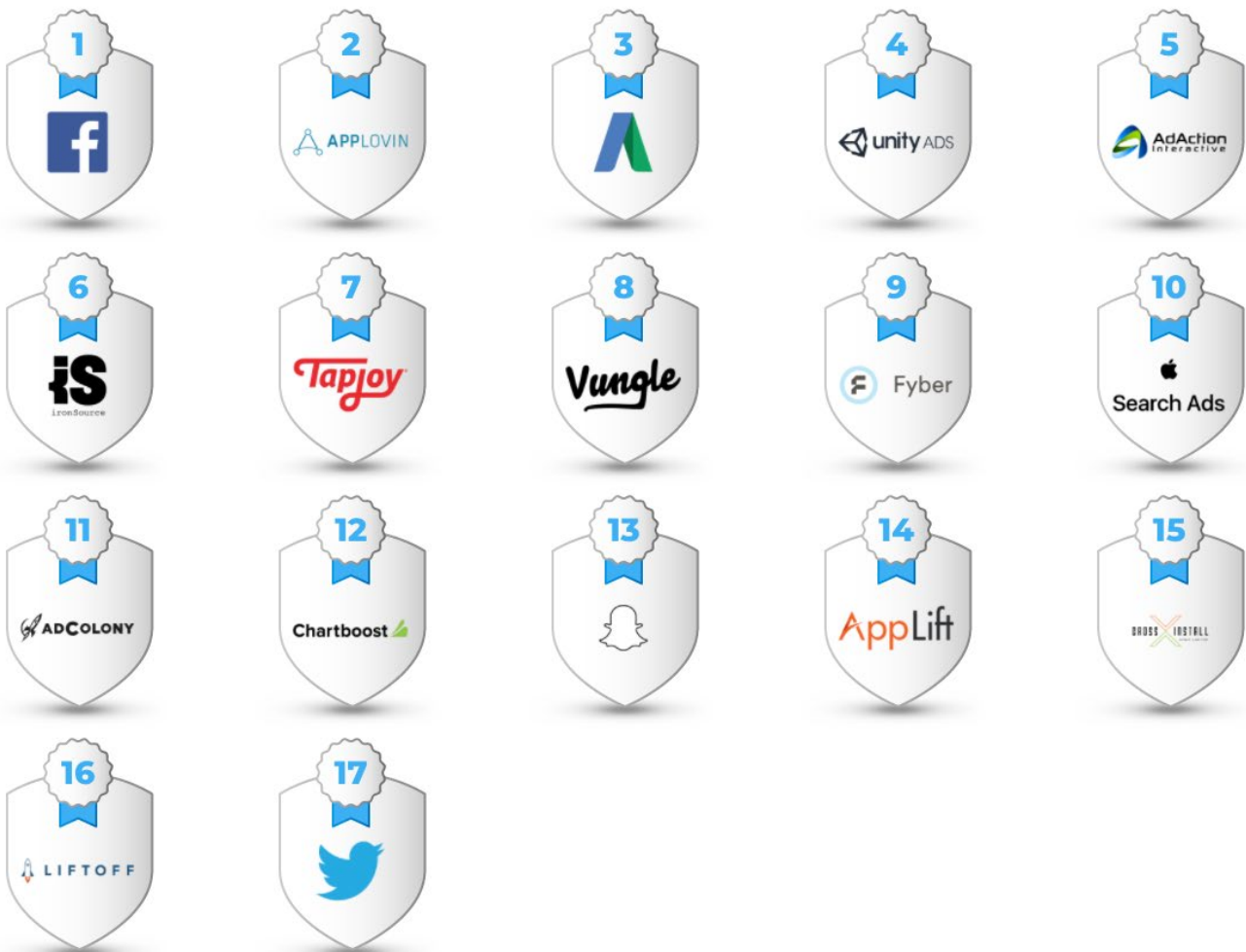




The Performance Index



WESTERN EUROPE / GAMING / iOS Volume Ranking





The Performance Index



SOUTHEAST ASIA / GAMING / ANDROID Power Ranking





The Performance Index



SOUTHEAST ASIA / GAMING / ANDROID Volume Ranking





The Performance Index



SOUTHEAST ASIA / GAMING / iOS Power Ranking





The Performance Index



SOUTHEAST ASIA / GAMING / iOS Volume Ranking





The Performance Index



INDIAN SUBCONTINENT / GAMING / ANDROID Power Ranking





The Performance Index



INDIAN SUBCONTINENT / GAMING / ANDROID Volume Ranking





The Performance Index



INDIAN SUBCONTINENT / GAMING / iOS Power Ranking





The Performance Index



INDIAN SUBCONTINENT / GAMING / iOS Volume Ranking





The Performance Index



GREATER CHINA / GAMING / ANDROID Power Ranking





The Performance Index



GREATER CHINA / GAMING / ANDROID Volume Ranking





The Performance Index



GREATER CHINA / GAMING / iOS Power Ranking





The Performance Index



GREATER CHINA / GAMING / iOS Volume Ranking

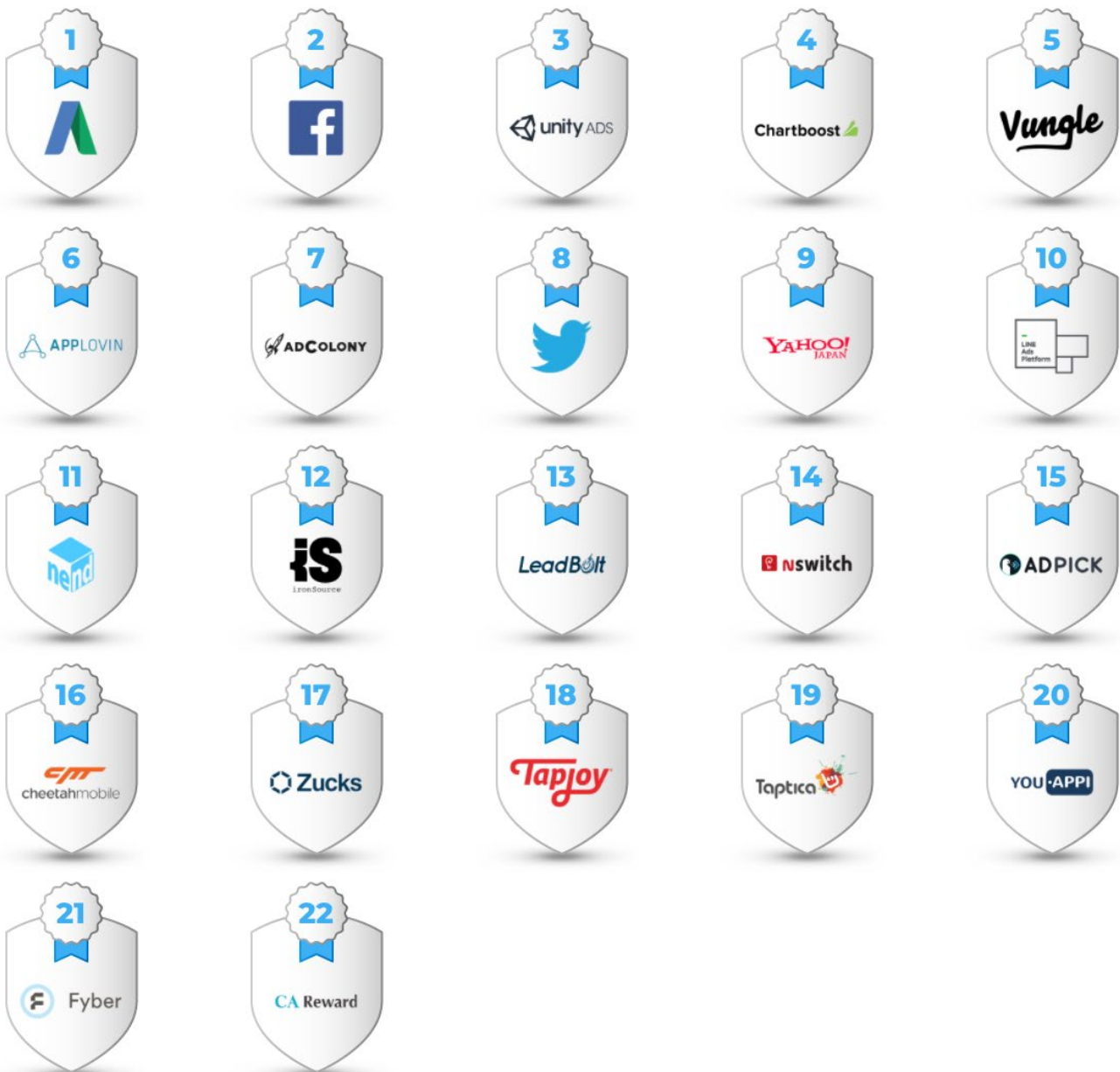




The Performance Index



JAPAN / KOREA / GAMING / ANDROID Power Ranking

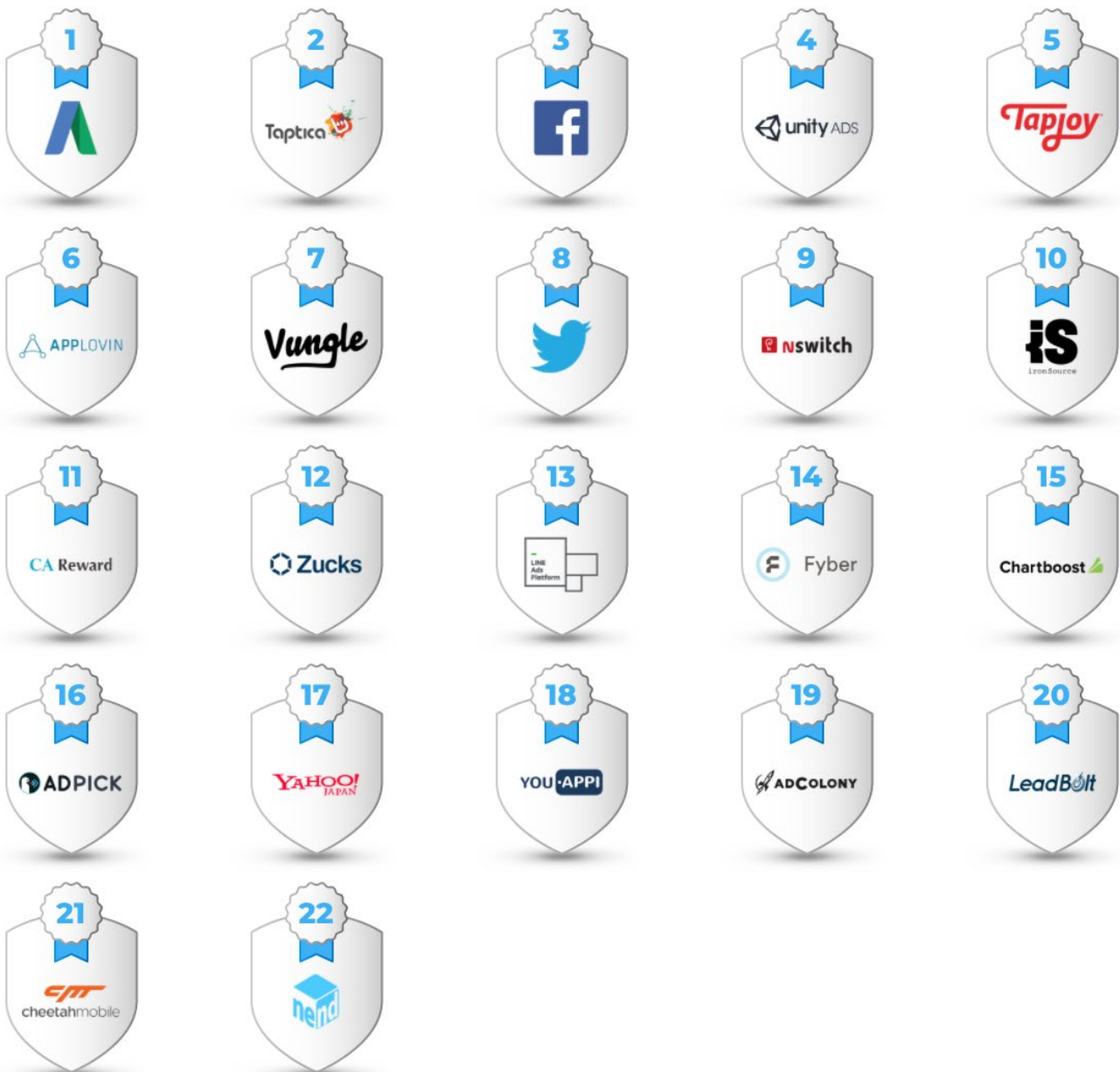




The Performance Index



JAPAN / KOREA / GAMING / ANDROID Volume Ranking





The Performance Index



JAPAN / KOREA / GAMING / iOS Power Ranking





The Performance Index



JAPAN / KOREA / GAMING / iOS Volume Ranking

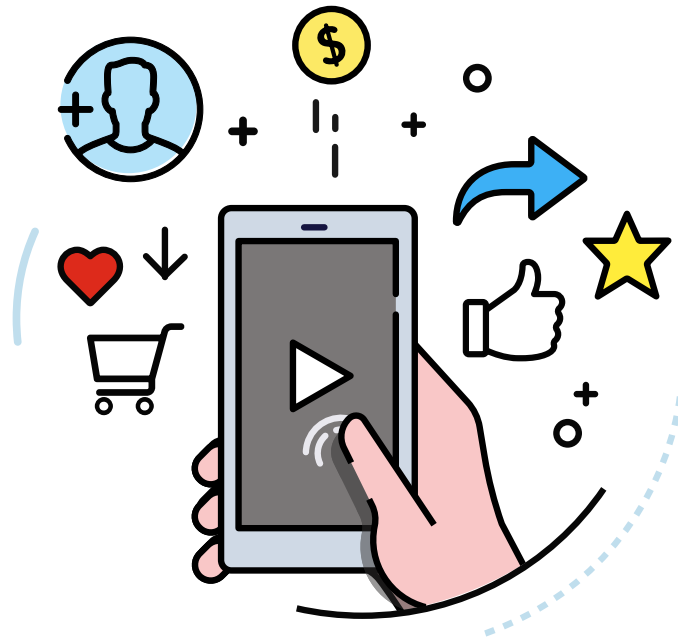




The Performance Index



PART II Non-Gaming





The Performance Index



NON-GAMING / UNIVERSAL Power Ranking

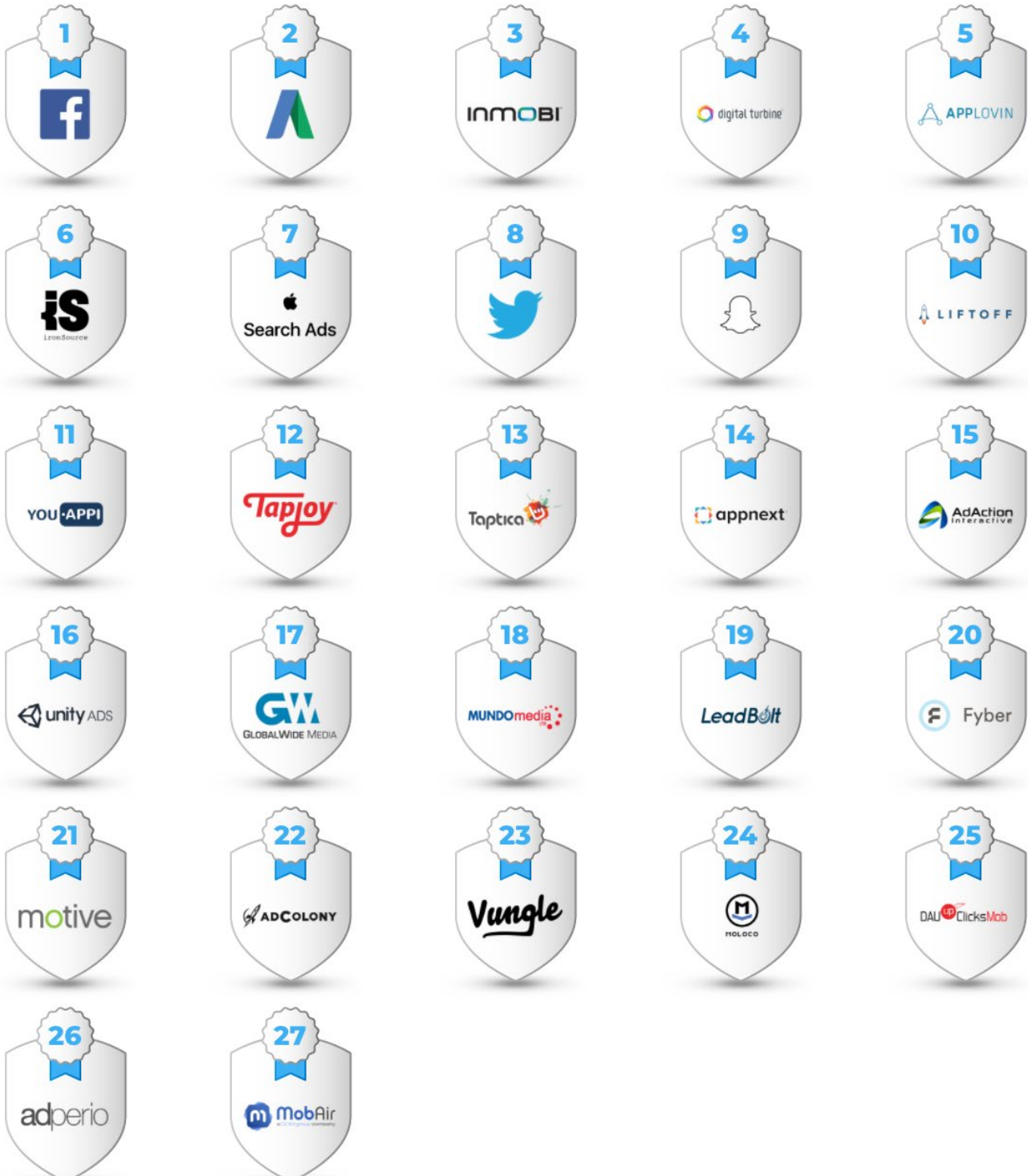




The Performance Index



NON-GAMING / UNIVERSAL Volume Ranking





The Performance Index



NORTH AMERICA / NON-GAMING / ANDROID Power Ranking

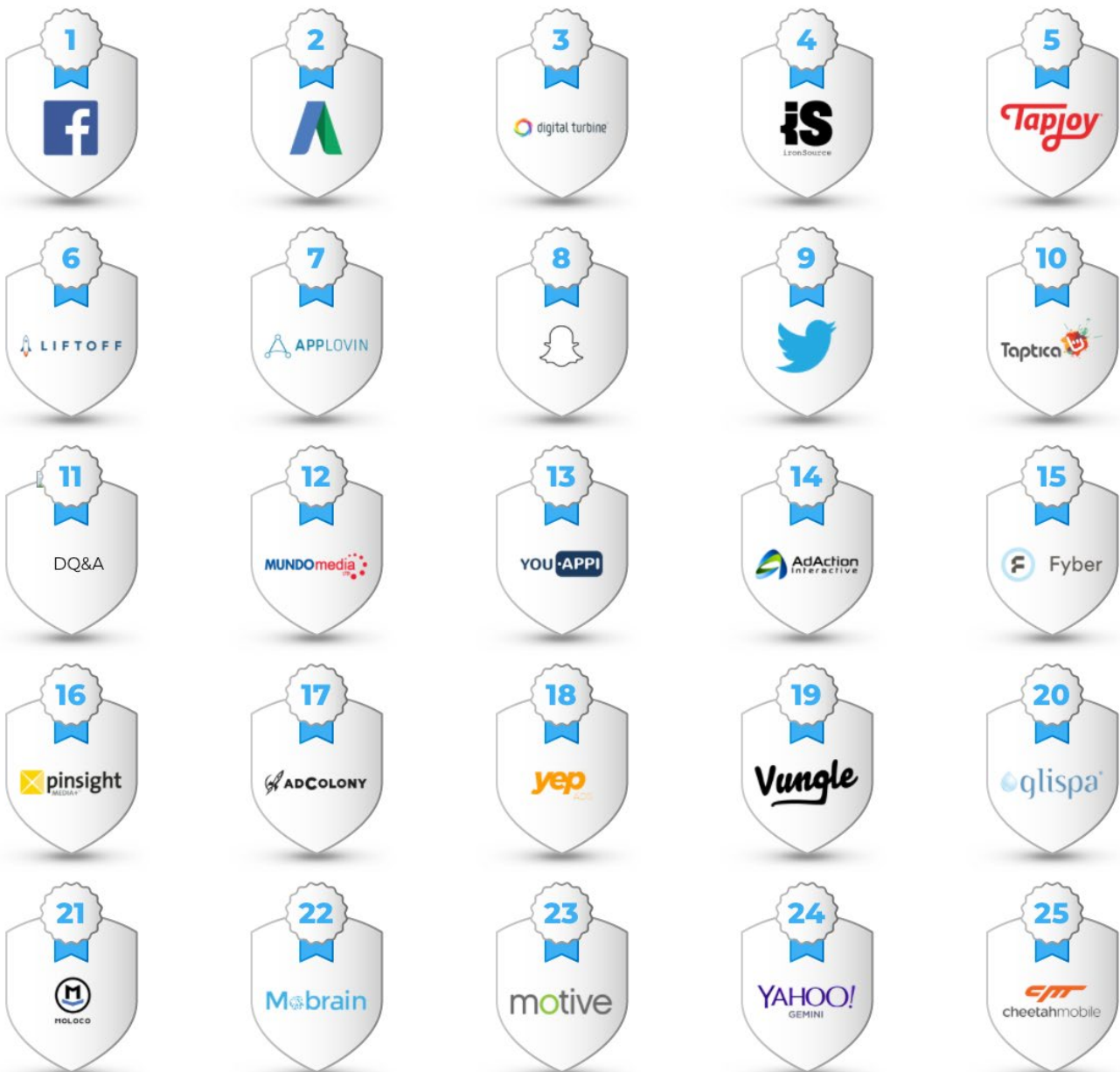




The Performance Index



NORTH AMERICA / NON-GAMING / ANDROID Volume Ranking





The Performance Index



NORTH AMERICA / NON-GAMING / iOS Power Ranking

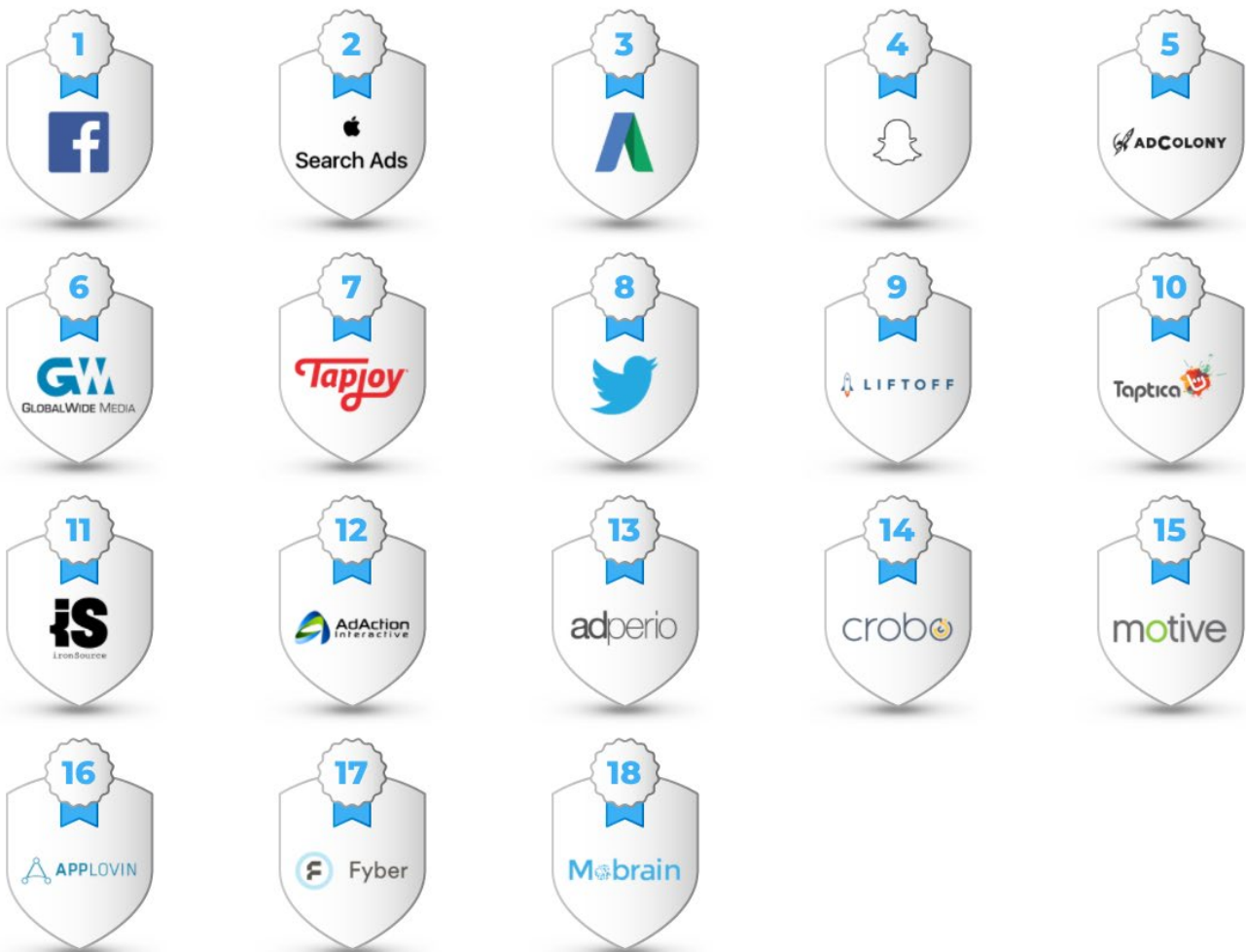




The Performance Index



NORTH AMERICA / NON-GAMING / iOS Volume Ranking

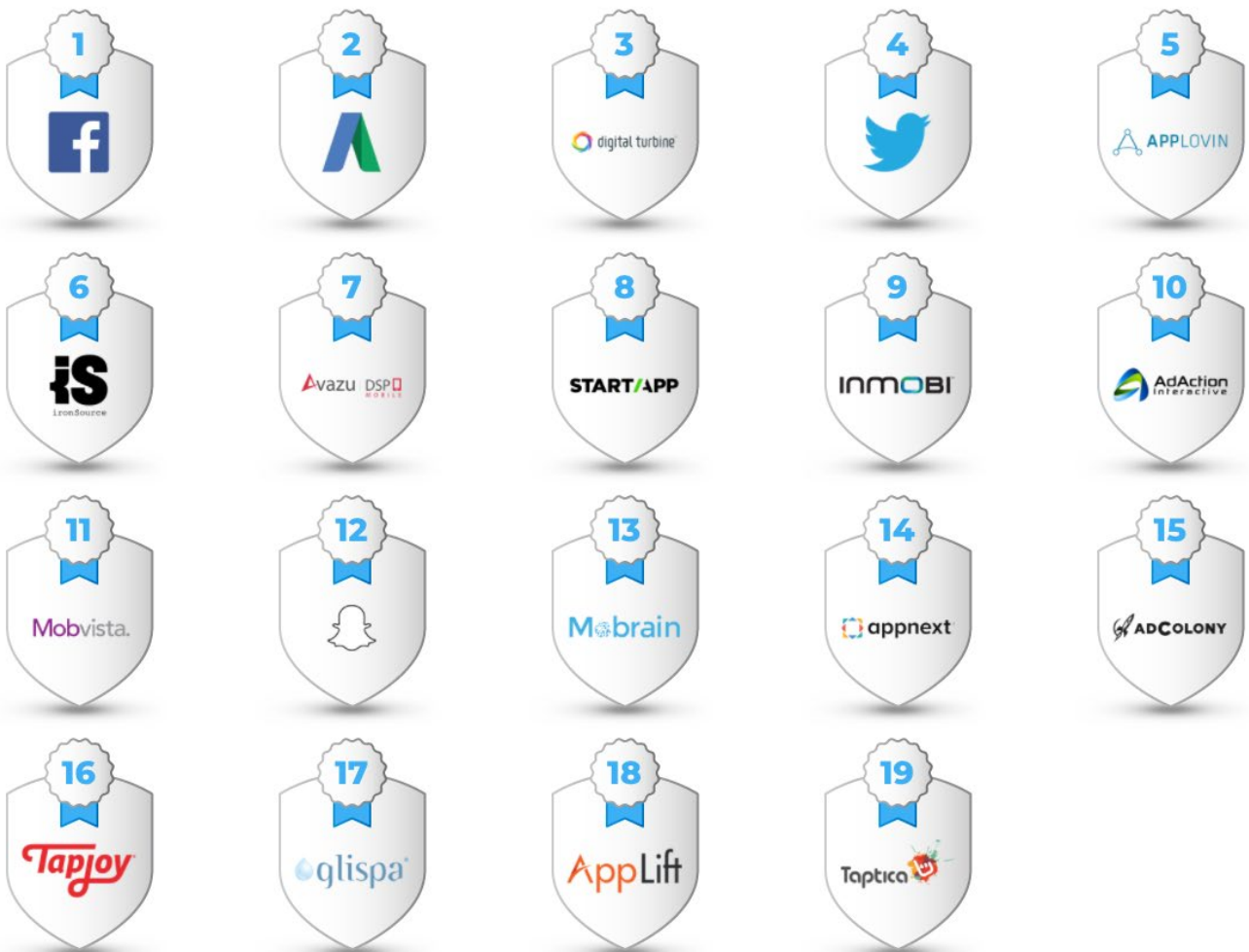




The Performance Index



LATIN AMERICA / NON-GAMING / ANDROID Power Ranking





The Performance Index



LATIN AMERICA / NON-GAMING / ANDROID Volume Ranking

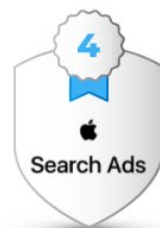




The Performance Index



LATIN AMERICA / NON-GAMING / iOS Power Ranking





The Performance Index



LATIN AMERICA / NON-GAMING / iOS Volume Ranking





The Performance Index



EASTERN EUROPE / NON-GAMING / ANDROID Power Ranking





The Performance Index



EASTERN EUROPE / NON-GAMING / ANDROID Volume Ranking





The Performance Index



EASTERN EUROPE / NON-GAMING / iOS Power Ranking





The Performance Index



EASTERN EUROPE / NON-GAMING / iOS
Volume Ranking





The Performance Index



WESTERN EUROPE / NON-GAMING / ANDROID Power Ranking





The Performance Index



WESTERN EUROPE / NON-GAMING / ANDROID Volume Ranking





The Performance Index



WESTERN EUROPE / NON-GAMING / iOS Power Ranking





The Performance Index



WESTERN EUROPE / NON-GAMING / iOS Volume Ranking

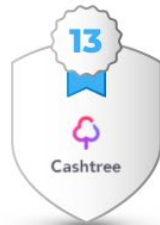




The Performance Index



SOUTHEAST ASIA / NON-GAMING / ANDROID Power Ranking





The Performance Index



SOUTHEAST ASIA / NON-GAMING / ANDROID Volume Ranking





The Performance Index



SOUTHEAST ASIA / NON-GAMING / iOS Power Ranking





The Performance Index



SOUTHEAST ASIA / NON-GAMING / iOS Volume Ranking





The Performance Index



INDIAN SUBCONTINENT / NON-GAMING / ANDROID Power Ranking





The Performance Index



INDIAN SUBCONTINENT / NON-GAMING / ANDROID Volume Ranking





The Performance Index



JAPAN / KOREA / NON-GAMING / ANDROID Power Ranking





The Performance Index



JAPAN / KOREA / NON-GAMING / ANDROID Volume Ranking





The Performance Index



JAPAN / KOREA / NON-GAMING / iOS Power Ranking





The Performance Index



JAPAN / KOREA / NON-GAMING / iOS Volume Ranking





The ROI Index



GAMING / ANDROID



GAMING / iOS





The ROI Index



NON-GAMING / ANDROID



NON-GAMING / iOS





The Retargeting Index



Power Ranking



Volume Ranking



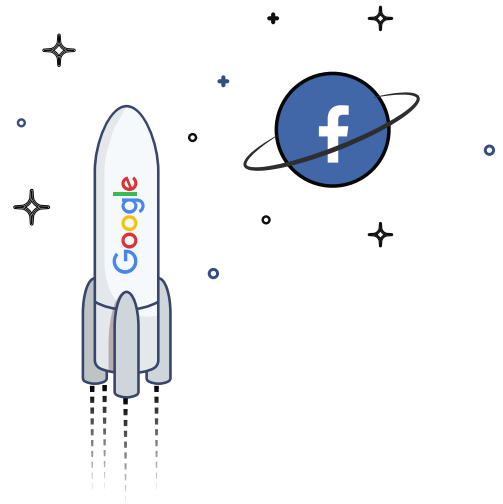


Universal Insights



Google surges but Facebook remains the #1 media source for app marketers across indexes

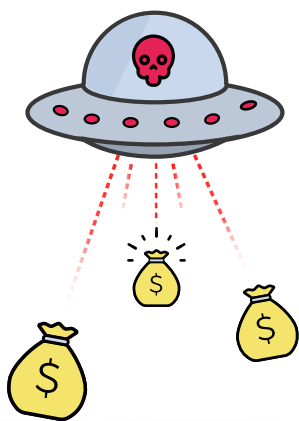
The tech giants continued to dominate the app install advertising market in Edition VI, but the good news for other media players fighting for a piece of the pie is that the share of Google and Facebook remained relatively unchanged compared to the previous index. Google's bold move to UAC appears to be bearing fruit as the search giant's share in the pie has climbed an impressive 40%, gaining ground on Facebook.



Having said that, Facebook remains the undisputed leader in the index with unrivaled scale -- almost 75% of apps running campaigns on the social network compared to 45% for Google -- and fantastic quality. Not only has Facebook reached the #1 spot in the power rankings of the gaming and non-gaming performance indexes, it has also come out in front in both the ROI and retargeting indexes!

Fraud rising

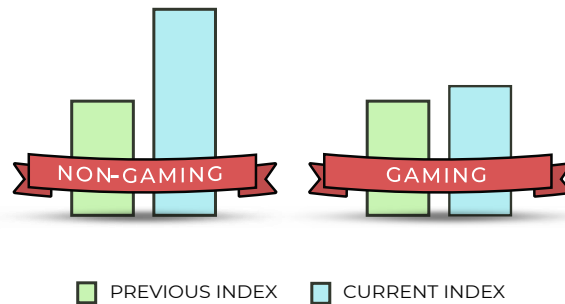
Fraud continues to pollute app marketers' data and at an increasingly alarming rate. In fact, when comparing Edition V and Edition VI, we found a 5% increase in the overall share of fraudulent installs. Examining the fraud rates of all media sources in the index revealed that 45% had more fraud compared to the previous index, 8% had roughly the same amount of fraud, and 47% had less fraud.



Clearly, it's a mixed bag. While there are many media companies who are taking fraud seriously, many others need to do a better job at it. What's also clear is that fraud is very dynamic. Ultimately, app marketers need to protect themselves with advanced anti-fraud mechanisms and constantly monitor their level of exposure.



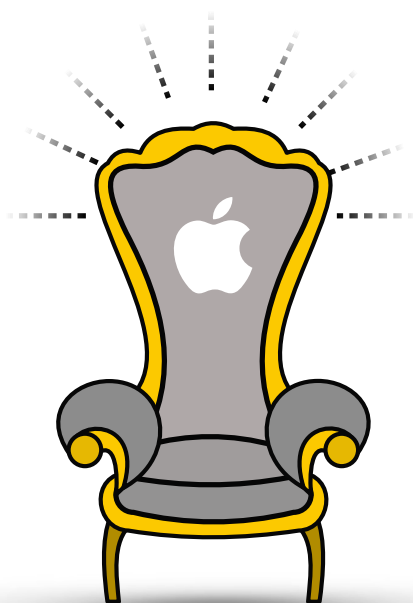
Universal Insights



New players making a mark among non-gaming apps, while gaming remains relatively unchanged

No less than 9 out of 26 media sources in the non-gaming index were new to the universal ranking. These include four in the top 10: Global Wide Media, Digital Turbine, Leadbolt, and Moloco, and two more in the top 15: Adperio and Liftoff. This tells us two things: the media space for non-gaming apps is more open to change than gaming, and there are probably quite a few players that have been somewhat under the radar but are definitely worth trying.

In the gaming index, only 6 out of 28 networks were new to the ranking, while the top 10 remained unchanged (within the top 10 no network shifted more than two spots). As savvy UA professionals, gaming app marketers seem to have found their recipe, partnering with networks that have gained the necessary expertise to run campaigns in this ultra-competitive vertical.



Apple solidifies its position as a top source, but higher demand comes at a cost

Since entering the market with its Search Ads product, Apple has gained significant traction, increasing its share in the app install pie by no less than 5 times (Q4 16 vs. Q4 17). This is no surprise considering the availability of powerful search intent signals and the current state of broken organic app discovery. In this edition of the index as in the previous, the consumer tech giant has been a top 3 player in non-gaming and a top 5 player in gaming.

However, with growing demand, Search Ads has become more competitive leading to an increase in media cost -- which in turn resulted in a drop in the ROI Index.



Universal Insights

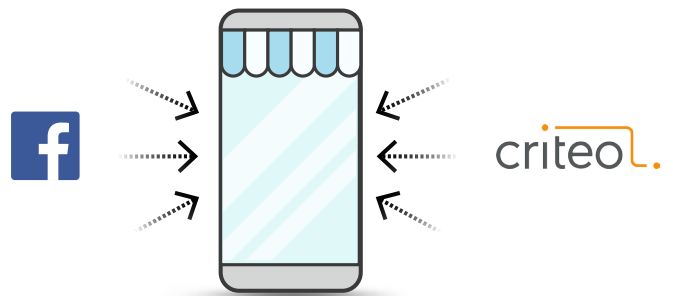


Retention drives success for top performers in the power rankings

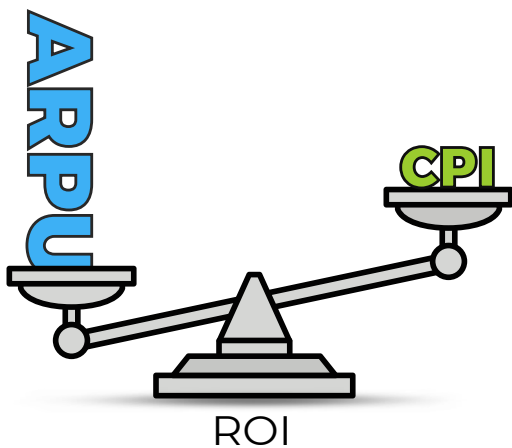
When examining top players in the performance indexes, a strong positive correlation was established between retention and position. That means that for most top performers -- 67% in gaming and 75% in non-gaming -- a high ranking is mainly tied to good retention rather than significant volume (their weight in the formula is equal)

Facebook and Criteo scale drives retargeting success

Two media sources command the lion's share of the app retargeting market: Facebook and Criteo. And their scale is a big reason why. Scale is extremely important in retargeting because the greater the scale the greater the chances a network has to actually find an app's existing users.



In that sense, Facebook has unrivaled capabilities while the desktop retargeting powerhouse Criteo has shown it has adapted extremely well to the mobile era with significant in-app inventory scale. Indeed, we've found that for top performers, volume had a stronger effect on the retargeting power ranking than ARPU.



High ARPU rather than low cost delivers ROI performance

In both gaming and non-gaming categories we have found that high revenue has a stronger correlation with ROI than a low CPI. Marketers should therefore pay more attention to revenue when optimizing and selecting media sources to work with.

Also, we've found that when comparing standard deviation -- meaning the distribution of ROI results -- there was far greater variation in the non-gaming index (7x). As such, non-gaming apps should keep a closer eye on this KPI since a change can yield a stronger impact.



Universal Insights



BONUS: Long-Term Week 12 Retention Ranking -- Top 15

For the first time, we've included a longer term retention rate in the index's power ranking formula, measuring user launches 12 weeks after install. We've isolated this data point to create a ranking that is based solely on retention among networks that appeared in the universal indexes (determined by the weighted retention score for week 12 -- see methodology for more).

The findings below clearly show that direct traffic reigns supreme in terms of delivering the highest quality users retained as far as week 12.

GAMING





Universal Insights

Week 12 Retention Ranking



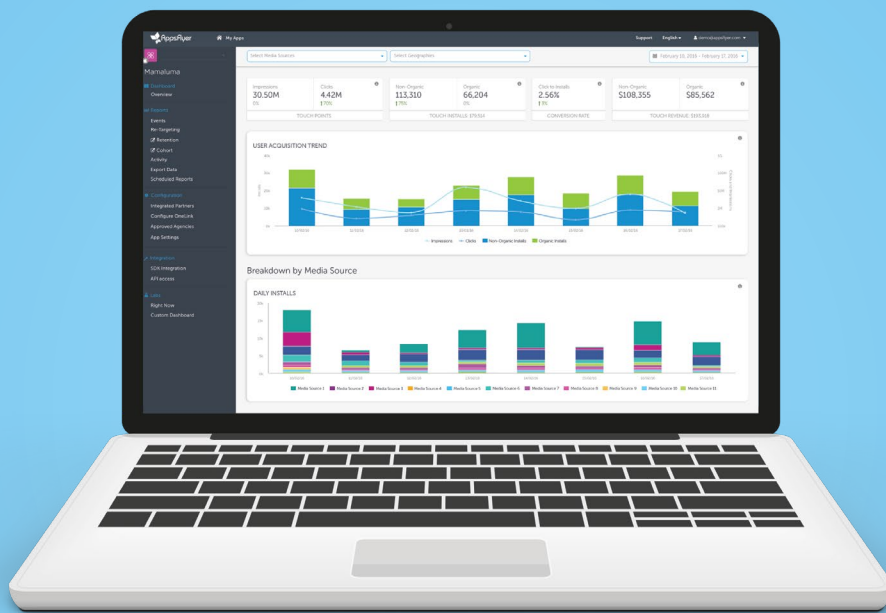
NON-GAMING





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